

AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Fig. 3.

REMARKS

Claims 1-6 are pending. By this Response, claims 1-6 are amended, the specification is amended, a new abstract and new title are provided. Also, corrected drawings are attached.

Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Abstract

Applicants note that a new abstract is provided that complies with the proper format for abstracts.

Title

The Office Action alleges that the title is not descriptive. Therefore, a new title is provided that is more descriptive of the invention. The title is now “An Optical Device Uniquely Mounted on an Object to Allow Reception and Transmission of Light in the Interior of the Object.” Accordingly, withdrawal of the objection is respectfully requested.

Drawings

The Office Action objects to the drawings under 37 C.F.R. §1.83(a). Specifically, the Office Action alleges that the “pattern on the surface of the substrate described in the claims is not shown in the Figures. Applicants note that Fig. 3 has been corrected such that it illustrates this feature. Also, page 4 of the specification has been amended to also reflect the addition to Fig. 3. No new matter has been added. Applicants respectfully submit that the figures are now

in compliance with 37 C.F.R. §1.83(a). Accordingly, reconsideration and withdrawal of the objection is respectfully requested.

Claim Objections

The Office Action rejects claims 1-6 due to various antecedent basis problems. Applicants respectfully submit that the amendments to claims 1-6 address the antecedent basis issues. Accordingly, reconsideration and withdrawal of the objections to claims 1-6 are respectfully requested.

Prior Art Rejection

The Office Action rejects claims 1-6 under 35 U.S.C. §103(a) as being unpatentable over Fischbach, et al. (US 6,713,677). This rejection is respectfully traversed.

Fischbach teaches a housing assembly for semiconductor chips (2). The housing includes an underside covering (5) in which gaps (7) are filled with epoxy resin. See column 5, lines 52-65. A contact area (16) is provided on an external contact carrier (3) positioned on top of an edge covering (13), the edge covering being intrically part of the undercovering (5). A bonding wire is connected to the contact (16) and conductors (21) located on the external contact carrier (3). A resign covers the contact (16), boding wire and part of the conductors (21) to secure these features together. The contact (16) makes electrical contact with the semiconductor chip (2).

Applicant respectfully submits that Fischbach does not teach or suggest the semiconductor chip as being a light emitting member or light receiving member as claimed in

embodiments of the present invention. Simply, there is no teaching that would suggest applying Fischbach's housing to include a light emitting or light receiving member.

Fischbach merely teaches that the housing is used to encase a semiconductor chip. The semiconductor chip is fully encased for its protection. Fischbach teaches nothing regarding modifying its casing to include a light emitting or light receiving device. Thus, one of ordinary skill would not be motivated to place a light emitting or light detector device in Fischbach's housing. Applicant respectfully submits that such combination is purely based on hindsight to applicant's disclosure.

Also, even if one could consider the semiconductor chip as being interchangeable with the light emitting or light receiving member, which applicants contend it cannot, the underside surface of Fischbach's casing is fully enclosed. The gaps are used to change the size of the casing during construction based on the size of the semiconductor chip. These gaps are then fully enclosed with a resin, enclosing the casing itself. Thus, a portion of the semiconductor chip could not be inserted in an engaging hole of a substrate, as recited in claims 1, 3, 5 and 6.

The Office Action alleges that "it would have been obvious, to one of ordinary skill in the art at the time of the invention to apply the surface mounting configuration in Fischbach for a light emitting device because it is well known in the art that efficient mounting devices may be used interchangeably between light sources and light detectors depending on the desired use of the optical system." See page 6 of the Office Action.

Fischbach does not teach or suggest an optical system. Fischbach teaches a housing for a semiconductor chip. Further, it is not readily clear what the interchangeability of a light emitting device and a light detector, both of which are not taught in Fischbach, has to do with providing

proper motivation to combine such light emitting or light detector with Fischbach's housing design used for a semiconductor chip. Applicants respectfully submit that this is not proper motivation.

Further, the semiconductor chip is electrically engaged at contact 16 with contacts 21. Fischbach does not teach or suggest any other electrical connection. Thus, Fischbach does not teach or suggest an electrode member that is led out from a side of the main body of the optical device, is connected to a pattern formed on a surface of the substrate, and electrically connects the pattern and the light emitting member, as recited in claim 1 and electrically connects the pattern and the light receiving member, as recited in claim 3.

Also, Fischbach fails to teach or suggest, *inter alia*, a fixing electrode that is formed on the step portion, is connected to a pattern formed on a surface of the substrate, and electrically connects the pattern and the light emitting member, as recited in claim 5, and electrically connects the pattern and the light receiving member, as recited in claim 6.

The Office Action alleges that one of ordinary skill would be motivated to provide the electrical connection of applicants claimed invention because "it would have been obvious, however, to one of ordinary skill in the art at the time of the invention to use particular electrical connections to optimize the efficiency of the light receiving member by minimizing loss and preventing the device from overheating." First, Fischbach does not teach or suggest providing such electrical connections to optimize the efficiency and keep the device from overheating. Second, Fischbach only suggests electrical connections of the semiconductor chip by way of contact 16, nothing else. There is no suggestion to change the contact configuration for preventing overheating. Further, one of ordinary skill would not look to modify the

semiconductor chip to include such connections, because it is fully encased, that is the reason for the placement of contact 16 taught by Fischbach.

In view of the applications, applicants respectfully submit that Fischbach fails to teach each and every feature of the claims as required. Further, one of ordinary skill in the art would not be motivated to combine features that are absent in Fischbach with Fischbach's teachings as indicated above. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For at least these reasons, it is respectfully submitted that claims 1-6 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings (Reg. No. 48,917) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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